About : Home Renovations

What's Microlam or LVL?

From Lee Wallender,
Your Guide to Home Renovations.
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Microlam is a term you hear bandied around a lot when doing home renovations. Microlam, also known as Laminated Veneer Lumber or Weyerhauser's brand name of Giulam, is a fairly recent development in construction.
Thursday February 8, 2007 | comments (0)

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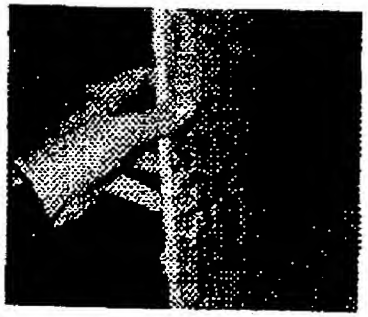

ENCLOSURE (C)

ENCLOSURE (D)

GLOSSARY OF ENGINEERING WOOD TERMS

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STRUCTURAL WOOD PANELS

Structural Plywood: The original structural wood panel, plywood consists of veneers arranged in perpendicular layers. The layers may consist of a single veneer ply or two or more plies laminated with the grain running in the same direction. There are always an odd number of layers, with the grain of the face layers typically oriented parallel to the long dimension of the panel. It is the cross-laminated layup of layers of veneer that gives plywood its excellent strength, stiffness and dimensional stability. In addition to a variety of sheathing, siding, sanded and concrete form grades, many manufacturers can produce custom layups for specialized applications.

Oriented Strand Board: OSB consists of wood strands bonded with adhesives to form a mat. Like the veneer in plywood, these mats are layered and oriented for maximum strength, stiffness and stability. The individual strands are typically three to four inches long. OSB is widely used as construction sheathing, as the web material for wood I-joists, as the structural membranes of structural insulated panels (SIPs), and in a growing number of other applications.

Structural Composite Panels: Structural composite panels (the APA tradename is COM-PLY) consist of veneer faces bonded to a wood-base core material, such as OSB. Composite panels are manufactured in three- or five-layer arrangements. A three-layer panel has a wood fiber core and a veneer face and back, while a five-layer panel also has a veneer crossband in the center. When manufactured in a one-step pressing operation, voids in the veneers are filled automatically by the particles or strands as the panel is pressed in the bonding process. Typical composite panel applications include sheathing, siding and industrial applications.

GLUED LAMINATED TIMBER (GLULAM)

Glulam is an engineered stress-rated product created by bonding together individual pieces of lumber having a thickness of two inches (50 mm) or less. Individual pieces of lumber are end-joined together to create long lengths referred to as laminations. These laminations are then face-bonded together to create the finished product. Glulam is also among the most versatile of the engineered wood products. It can be shaped into forms ranging from straight beams to complex curved members, and is used in a wide variety of residential and nonresidential building construction applications, including headers, floor girders, ridge beams and purlins, cantilever beam systems, arches, domes and exposed applications such as bridges, marines and utility structures.

STRUCTURAL COMPOSITE LUMBER

Laminated Veneer Lumber (LVL): LVL is the most widely used of the structural composite lumber products. It is produced by bonding thin wood veneers together in a large billet. The grain of all veneers is parallel to the long direction. The LVL billet is then sawn to desired dimensions depending on the construction application. Some of the product's many uses are headers and beams, hip and valley rafters, scaffold planking, and the flange material for prefabricated wood I-joists.

Parallel Strand Lumber (PSL): PSL consists of long veneer strands laid in parallel formation and bonded together with an adhesive to form the finished structural section. Like LVL and glulams, this product is used for beam and header applications where high bending strength is needed. PSL is also frequently used as load-bearing columns.

Oriented Strand Lumber (OSL): Similar to PSL, oriented strand lumber is made from flaked wood strands that have a high length-to-thickness ratio. Combined with an adhesive, the strands are oriented and formed into a large mat or billet and pressed. OSL is used in a variety of applications from studs to millwork components.

PREFABRICATED WOOD I-JOISTS

Also referred to as I-beams, wood I-joists are structural, load-carrying products. I-joists are typically available in long lengths and because they are very lightweight, they can be easily handled at the jobsite without the need for costly handling equipment. Their "I" configuration provides high bending strength and stiffness characteristics. The top and bottom flange material for I-joists is typically dimension lumber or laminated veneer lumber; the web material is OSB or plywood. Prefabricated wood I-joists are used extensively in residential construction for both floor and roof framing and are among the fastest-growing of the glued engineered wood products.

Plywood- The Original Engineered Wood Product

Manufactured from thin sheets of cross-laminated veneer and bonded under heat and pressure with strong adhesives, plywood has been one of the most ubiquitous building products for decades.

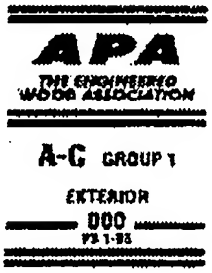
A Wide Range of Products
Plywood manufactured by APA member mills is available in a wide variety of appearance grades ranging from smooth, natural surfaces suitable for finish work and underlayment to more economical grades used for wall sheathing and subfloors. With more than a dozen common thicknesses and over twenty different grades, it's easy to specify the right panel for the job.

For Detailed and Technical Information

If you're looking for detailed and technical information on plywood, you may wish to jump directly to the **plywood section of the Publications Store.** Here you will find a complete listing of all APA publications featuring plywood, including case studies, technical sheets, builder tips and more. Many of these publications can be immediately downloaded for free. This section is searchable by keyword.

The APA Mark of Quality

APA trademarks appear only on products manufactured by APA member mills. The mark signifies that panel quality is subject to verification through APA audit– a procedure designed to assure manufacture in conformance with APA performance standards or the standard shown in the mark.



Related Publications

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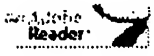

[**More Related Publications**]

Product Manufacturers *(Plywood)*

- **Ainsworth Lumber Co. Ltd. (Panels, Rim Board, LSL, OSL)**

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APA Performance Rated I-Joists

APA Performance Rated I-joists (PRI) are "I"-shaped engineered wood structural members that offer strength, versatility and economy for use in residential and light commercial applications. I-joists are comprised of top and bottom flanges of various widths united with webs of various depths. The flanges resist common bending stresses, and the web provides outstanding shear performance.

Resource Efficiency

I-joists can be manufactured using solid sawn lumber or structural composite lumber for the flange components, and plywood or oriented strand board for the web. This versatility allows the manufacturer to make the most efficient use of wood fiber resources in their region while producing products that consistently perform to known standards.

For Detailed and Technical Information

If you're looking for detailed and technical information on I-joists, you may wish to jump directly to the **I-joist section of the Publications Store.** Here you will find a complete listing of all APA publications featuring I-joists, including case studies, technical sheets, builder tips and more. Many of these publications can be downloaded immediately for free. This section is searchable by keyword.

Consistent Performance

APA Performance Rated I-joists are manufactured to specific dimensions commonly used in residential construction. They are ideal for long spans and readily available from most builder supply sources.

The APA Mark of Quality

APA trademarks appear only on products manufactured by APA member mills. The mark signifies that panel quality is subject to verification through APA audit– a procedure designed to assure manufacture in conformance with APA performance standards or the standard shown in the mark.

Related Publications

Builder Tips: Storage, Handling & Safety Recommendations for APA Performance Rated I-Joists

- PDF 76K
- Free Download

Glulam: Lower Cost, Higher Design Value

Glued laminated timber, or glulam, has been re-engineered to work better than ever in a host of construction applications. Increased design values have expanded design capabilities and improved product performance while maintaining a competitive cost. From residential construction to large commercial projects, glulam takes designs to a new level.

Make The Switch

Using glue laminated floor beams in your next commercial or residential project will bring added benefits beyond the structural considerations. Click **Floor Beams** under the Builder Guides on the left to read why you should make the switch to glulam today.

Glulam Enhances Transportation Structures

Glulam offers facility designers versatility, length of life, warmth, aesthetics, and budget-friendliness, making it the perfect product for a transportation structure project. See how designers have employed glulam's benefits by visiting our portfolio of **Glulam in Transportation Structures** today, or read our new **publication** on the subject for more information.

Passport to Inspiration

The Okutsu Hot Springs complex combines noted Japanese architect Hirofumi Sugimoto's vision with the versatility of glulam in a variety of buildings in the resort. In the U.S. and around the world, glulam delivers architectural design that soars, strength and dependable performance, and finished structures infused with the warm character of wood.

Find your inspiration by visiting our portfolios of glulam use in **churches** and **schools**, or browse through the guides to delve into technical specifications.

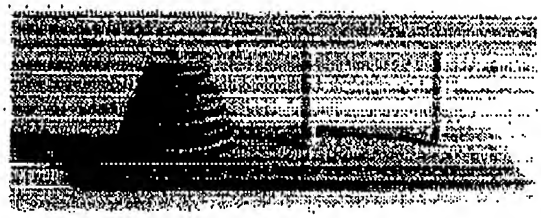
Use Glulam With Narrow Wall Bracing

An integral part of APA's Narrow Wall Bracing Method is extending headers to the corner framing. When glulam is used, the extended headers provide a good nailing surface for the sheathing and enhance the lateral strength of the wall. Glulam beams work well in tandem with the

Plywood

From Wikipedia, the free encyclopedia

Plywood was the first type of engineered wood to be invented. It is made from thin sheets of wood veneer, called plies or veneers. These are stacked together with the direction of each ply's grain differing from its neighbors' by 90° (cross-banding).[1] The plies are bonded under heat and pressure with strong adhesives, usually phenol formaldehyde resin,[2] making plywood a type of composite material. A common reason for using plywood instead of plain wood is its resistance to cracking, shrinkage, twisting/warping, and its general high degree of strength.



Toy constructed from plywood. Notice the high quality wood veneer (light color) covering the lower quality inner wood (dark color).

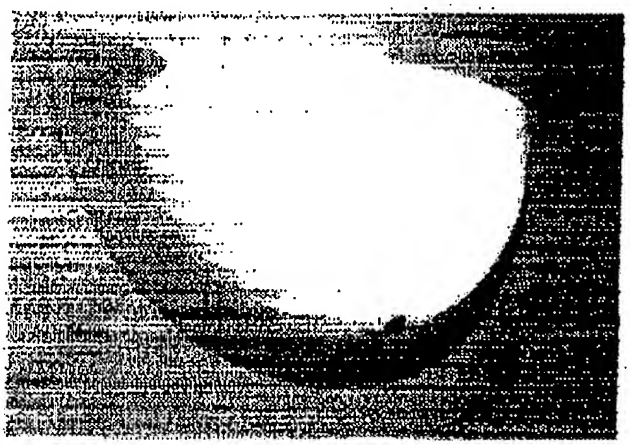
Contents

good quality concrete pouring plate in plywood

Types of plywood

A vast number of varieties of plywood exist, with many conditions and uses. Softwood plywood is usually made either of Douglas fir or spruce, pine, and fir, and is typically used for construction and industrial purposes.[3] Decorative plywood is usually faced with hardwood, including red oak, birch, maple, lauan (Philippine mahogany) and a large number of other hardwoods.

Plywood meant for indoor use generally uses the less expensive urea-formaldehyde glue which has limited water resistance, while outdoor and marine grade plywood are designed to withstand rot and use a water resistant phenol-formaldehyde glue to prevent delamination and to retain strength in high humidity.



A wall lamp made partially from plywood